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DIRECTORATE OF INTELLIGENCE

Intelligence Memorandum

Hungary Acquires
Advanced Communications Technology
from Sweden

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September 1968

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
September 1968

INTELLIGENCE MEMORANDUM

Hungary Acquires Advanced Communications Technology from Sweden

Summary

An agreement recently signed by Hungary and two Western firms represents a major breakthrough in the long-continued efforts of the Communist countries of Eastern Europe to acquire advanced communications technology from the Free World. This agreement was signed early in 1968 between BUDAVOX (the Hungarian foreign trading company for telecommunications) and two Free World firms -- L.M. Ericsson of Sweden and Société Anonyme de Télécommunications (SAT) of France. Under its terms, Hungary will acquire from Ericsson the know-how and manufacturing rights for production of crossbar telephone exchanges, telephone multiplexing systems up to 960 channels,* and ancillary transmission equipment; SAT will provide Hungary with coaxial cable and related components compatible with the Ericsson systems. The agreement is valued at US $4 million.

The Swedish-Hungarian agreement implies major technological gains for all the Communist countries

* *Crossbar exchanges are those exchanges that employ advanced switching and control systems which permit fast, automatic, and economical telephone call completions. Multiplexing equipment provides for the simultaneous transmission of telephone conversations or other information signals over the same circuit.*

Note: This memorandum was produced solely by CIA.

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of Eastern Europe, including the USSR. Hungary will be able to produce, for the first time -- and supply to other Communist countries -- telephone multiplexing systems with capacities greater than 120 channels; the production of 960-channel systems will represent a sevenfold improvement over the capacity of systems currently being produced.

The deal has considerable potential significance for the USSR, where modern communications equipment is in short supply. As the primary recipient of Hungarian telecommunications equipment, the USSR will be able to ease domestic shortages with minimum disruption to its own production programs.

High-capacity telephone carrier systems are currently embargoed under COCOM controls over trade with Communist countries. The Hungarian agreement with Ericsson thus breaches for the first time barriers erected by COCOM to prevent modern Free World communications technology from reaching the Communist countries. Sweden is not a participating country in COCOM. The establishment of commercial relations between BUDAVOX and Ericsson via the new agreement could provide a vehicle for the acquisition of even more strategic communications technology, such as pulse code modulation (PCM) multiplexing systems. Because of their freedom from noise and distortion, PCM systems have special value for military applications.

Introduction

1. In early March 1968, BUDAVOX concluded an agreement with L.M. Ericsson Company of Sweden and SAT of France to acquire communications technology substantially more advanced than that now available in the USSR or in Eastern Europe. The agreement, valued at $4 million, is reportedly the largest international agreement entered into by the Hungarian telecommunications industry since the end of World War II. Under the agreement, Hungary will acquire manufacturing know-how and licensing rights to produce crossbar telephone exchanges, telephone multiplexing systems for 300 and 960 channels, and ancillary transmission equipment from Ericsson. SAT will provide Hungary with coaxial cable and related components for the Ericsson telephone transmission systems. Production will begin during 1970-72, apparently at the Beloiannisz plant in Budapest. In addition, Hungary acquired export rights for the equipment to be produced under license.

Breach of Free World Trade Controls

2. This agreement marks the first time that any Communist country has acquired the rights to produce under license and export high-capacity telephone carrier systems currently embargoed by COCOM. Sweden is not a member of COCOM but, in past years, has refrained from exporting to Communist countries goods considered strategic by COCOM nations. Moreover, Ericsson's present willingness to sell telecommunications manufacturing know-how to Hungary could be followed by similar arrangements with other Communist countries. Ericsson projects a growth in sales to Communist countries averaging 30 percent annually over the next 10 years, indicating that it plans to become increasingly active in the marketing of telecommunications equipment in Eastern Europe.

3. The Swedish-Hungarian transaction is likely to result in stepped-up deliveries of modern crossbar dial telephone exchanges and high-capacity telephone multiplexing equipment to the USSR, possibly beginning in 1970. Hungary already delivers 80 to 90 percent of its total exports of telecommunications equipment to the USSR. Current exports from Hungary to the USSR of telephone

exchanges, multiplexing equipment, and microwave radio-relay systems are running at the rate of $30 million to $35 million annually. The longer range effect of this transaction could be a strengthening of Hungary's role as a major supplier of modern telecommunications equipment throughout Eastern Europe and to Cuba and Communist China. Hungary already exercises some exclusive rights within CEMA as a developer, producer, and supplier of microwave radio-relay systems to Eastern European Communist countries.

Solution to Communist Technological Problems in Communications

4. The Swedish-Hungarian agreement implies major technological gains for all the Communist countries of Eastern Europe, including the USSR. These countries, despite several years of intensive development, do not now produce large-capacity (greater than 2,000 lines) crossbar dial telephone exchanges or 300- and 960-channel capacity multiplexing systems. A new medium-capacity crossbar exchange, ATS-K, for 1,000 lines, was only recently (1967) developed through the concerted effort of the USSR (Central Scientific Research Institute for Communications, Leningrad), Czechoslovakia (Tesla), and East Germany (Arnstad VEB Fernmeldewerk) and may now be produced in small quantities. Smaller capacity crossbar telephone exchanges have been in production in the USSR only since 1963, although they have been in common use throughout the non-Communist world for more than a decade. The acquisition of production technology for 960-channel equipment will mean a sevenfold increase over the capacity of multiplexing systems now produced in Communist countries. Earlier efforts by the USSR and Hungary to acquire Western production equipment and technology for high-capacity systems from Free World countries participating in the COCOM embargo have been unsuccessful.

Significance for Soviet Requirements

5. The USSR has pressing requirements for modern telephonic equipment. There are only 8.4 million telephone subscribers in the USSR for a population of 235 million -- that is, the USSR has the lowest telephone density of any major industrialized country (3.6 telephones per 100 persons compared

with more than 52 telephones per 100 persons in the US) and lags behind most of the Eastern European countries as well. But the rapid pace of urbanization and the growing demands of industry and government are generating urgent demands for all types of telephonic equipment, particularly in the major urban centers. The number of telephones in Moscow, for example, is planned to double during the current five-year plan period, 1966-70, and is supposed to grow fourfold by 1980. Soviet planners apparently intend to satisfy much of their telephonic requirements through imports. In particular, imports from Hungary (after production under the Ericsson license has started) will enable the USSR to modernize its obsolescent telephone system with up-to-date Western technology. This can be done with minimum expenditure of funds from Soviet hard currency reserves and without a costly diversion of technical resources and manpower from other priority research and production programs.

Long-Term Strategic Significance

6. The acquisition of high-capacity multiplexing systems from Hungary will benefit the Soviet military establishment in two ways: (1) at least initially, a substantial share of new high-quality circuits on existing upgraded common carrier facilities undoubtedly will be given over to the exclusive use of military and other defense-support authorities; and (2) Soviet military authorities will be enabled to build new long-haul strategic circuits that are buried, secure, and reliable.

7. In addition, the close commercial association between Ericsson and BUDAVOX could lead to further gains for Communist countries in the acquisition of Free World communications technology at the highest state-of-the-art, such as PCM multiplexing equipment. PCM equipment has special value for military communications systems because of its freedom from noise and distortion. Both Hungary and the USSR have active PCM development programs, but neither has made a production prototype. Hungary has recently tried unsuccessfully to purchase PCM technology from Italy; Soviet efforts to obtain a PCM system from Japan have also been unsuccessful. Ericsson is active in the development of both PCM systems and the very new systems for electronic switching, and it is not prevented by international commitments from selling the essential technology to BUDAVOX.